National Transportation Safety Board NTSB ID: DCA00MA023 Aircraft Registration Number: N963AS FACTUAL REPORT Occurrence Date: 01/31/2000 Most Critical Injury: Fatal AVIATION Occurrence Type: Accident Investigated By: NTSB Location/Time Nearest City/Place State Zip Code Local Time Time Zone PST CA 1620 Port Hueneme Distance From Landing Facility: 55 Airport Proximity: Off Airport/Airstrip Direction From Airport: 290 Aircraft Information Summary Aircraft Manufacturer Model/Series Type of Aircraft Douglas MD-83 Airplane

Sightseeing Flight: No

Air Medical Transport Flight: No

Narrative

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

The Safety Board's full report is available at www.ntsb.gov/publictn/publictn.htm.

On January 31, 2000, about 1621 Pacific standard time, Alaska Airlines, Inc., flight 261, a McDonnell Douglas MD-83 (MD-83), N963AS, crashed into the Pacific Ocean about 2.7 miles north of Anacapa Island, California. The 2 pilots, 3 cabin crewmembers, and 83 passengers on board were killed, and the airplane was destroyed by impact forces. Flight 261 was operating as a scheduled international passenger flight under the provisions of 14 Code of Federal Regulations Part 121 from Lic Gustavo Diaz Ordaz International Airport (PVR), Puerto Vallarta, Mexico, to Seattle?Tacoma International Airport (SEA), Seattle, Washington, with an intermediate stop planned at San Francisco International Airport (SFO), San Francisco, California. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

The accident airplane arrived at PVR about 1239 on the day of the accident. The inbound pilots stated that they met the accident pilots outside the airplane and briefly discussed its status.

Flight data recorder (FDR) information from the accident flight indicated that during taxi for takeoff, when the FDR started recording, the horizontal stabilizer was at the 7 airplane-nose-up position, which was the takeoff pitch trim setting. About 1337, the accident airplane departed PVR as flight 261. A National Transportation Safety Board review of FAA air traffic control (ATC) tapes and FDR data from the accident flight indicated that the first officer was the pilot flying immediately after the airplane's departure. The flight plan indicated that flight 261's cruising altitude would be flight level (FL) 310.

FDR data indicated that during the initial portion of the climb, the horizontal stabilizer moved at the primary trim motor rate of 1/3 per second from 7 to 2 airplane nose up. According to FDR data, the autopilot was engaged at 1340:12, as the airplane climbed through an altitude of approximately 6,200 feet. Thereafter, the FDR recorded horizontal stabilizer movement at the alternate trim motor rate of 1/10 per second from 2 airplane nose up to 0.4 airplane nose down. At 1349:51, as the airplane continued to climb through approximately 23,400 feet at 331 knots indicated airspeed (KIAS), the cockpit voice recorder (CVR) recorded the horizontal stabilizer move from 0.25 to 0.4 airplane nose down. This was the last horizontal stabilizer movement recorded until the airplane's initial dive about 2 hours and 20 minutes later. At 1353:12, when the airplane was climbing through 28,557 feet at 296 KIAS, the autopilot disengaged.

FDR information and airplane performance calculations indicated that, during the next 7 minutes, the airplane continued to climb at a much slower rate. During this part of the ascent, the elevators were deflected between -1 and ?3, and the airplane was flown manually using up to as much as 50 pounds of control column pulling force. After reaching level flight, the airplane was flown for about 24 minutes using approximately 30 pounds of pulling force at approximately 31,050 feet and 280 KIAS. The airspeed was then increased to 301 KIAS, and the airplane was flown for almost another 1 hour 22 minutes using about 10 pounds of pulling force. At 1546:59, the autopilot was re?engaged.

According to Alaska Airlines documents, ATC and CVR information, and postaccident interviews with Alaska Airlines dispatch and maintenance personnel, the flight crew contacted the airline's

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dispatch and maintenance control facilities in SEA some time before the beginning of the CVR transcript at 1549:49 to discuss a jammed horizontal stabilizer and a possible diversion to Los Angeles International Airport (LAX), Los Angeles, California. These discussions were conducted on a shared company radio frequency between Alaska Airlines' dispatch and maintenance facilities at SEA and its operations and maintenance facilities at LAX.

At 1549:56, the autopilot was disengaged; it was re-engaged at 1550:15. According to the CVR transcript, at 1550:44, SEA maintenance asked the flight crew, "understand you're requesting diversion to LAis there a specific reason you prefer LA over San Francisco?" The captain replied, "well a lotta times its windy and rainy and wet in San Francisco and uh, it seemed to me that a dry runwaywhere the wind is usually right down the runway seemed a little more reasonable." At 1552:02, an SEA dispatcher provided the flight crew with the current SFO weather (wind was 180 at 6 knots; visibility was 9 miles). The SEA dispatcher added, "if uh you want to land at LA of course for safety reasons we will do thatwe'lltell you though that if we land in LAwe'll be looking at probably an hour to an hour and a half we have a major flow program going right now." At 1552:41, the captain replied, "I really didn't want to hear about the flow being the reason you're calling us cause I'm concerned about overflying suitable airports." At 1553:28, the captain discussed with the first officer potential landing runways at SFO, stating, "one eight zero at sixso that's runway one six what we need is runway one nine, and they're not landing runway one nine." The first officer replied, "I don't think so." At 1553:46, the captain asked SEA dispatch if they could "get some support" or "any ideas" from an instructor to troubleshoot the problem; he received no response. At 1555:00, the captain commented, "it just blows me away they think we're gonna land, they're gonna fix it, now they're worried about the flow, I'm sorry this airplane's [not] gonna go anywhere for a whileso you know." A flight attendant replied, "so they're trying to put the pressure on you," the captain stated, "well, no, yea."

At 1556:08, the SEA dispatcher informed the flight crew that, according to the SFO automatic terminal information service, the landing runways in use at SFO were 28R and 28L and that "it hasn't rained there in hours so I'm looking atprobably a dry runway." At 1556:26, the captain stated that he was waiting for a requested center of gravity (CG) update (for landing), and then he requested information on wind conditions at LAX. At 1556:50, the SEA dispatcher replied that the wind at LAX was 260 at 9 knots.

Nine seconds later, the captain, comparing SFO and LAX wind conditions, told the SEA dispatcher, "versus a direct crosswind which is effectively no change in groundspeedI gotta tell you, when I look at it from a safety point I think that something that lowers my groundspeed makes sense." The SEA dispatcher replied, "that'll mean LAX then for you." He then asked the captain to provide LAX operations with the information needed to recompute the airplane's CG because "they can probably whip out that CG for you real quick." At 1558:15, the captain told the SEA dispatcher, "we're goin to LAX we're gonna stay up here and burn a little more gas get all our ducks in a row, and then we'll uh be talking to LAX when we start down to go in there." At 1558:45, the captain asked LAX operations if it could "compute [the airplane's] current CG based on the information we had at takeoff."

At 1602:33, the captain asked LAX operations for wind information at SFO. LAX operations replied that the winds at SFO were 170 at 6 knots. The captain replied, "that's what I needed. We are comin in to see you." At 1603:56, the first officer began giving LAX operations the information it needed to recompute the airplane's CG for landing.

At 1607:54, a mechanic at Alaska Airlines' LAX maintenance facility contacted the flight crew on the company radio frequency and asked, "are you [the] guys with the uh, horizontal [stabilizer] situation?" The captain replied, "affirmative," and the mechanic, referring to the stabilizer's primary trim system, asked, "did you try the suitcase handles and the pickle switches?" At 1608:03, the captain replied, "yea we tried everything together." At 1608:08, the captain added, "we've run just about everything if you've got any hidden circuit breakers we'd love to know about 'em." The mechanic stated that he would "look at the uh circuit breaker uh guide just as a double check." The LAX mechanic then asked the flight crew about the status of the alternate trim system, and, at 1608:35, the captain replied that "it appears to be jammedthe whole thing, it [the AC load meter] spikes out when we use the primary, we get AC [electrical] load that tells me the motor's tryin to run but the brake won't move it. when we use the alternate, nothing happens."

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At 1608:50, the LAX mechanic asked, "you say you get a spikeon the meter up there in the cockpit when you uh try to move it with theprimary right?" According to the CVR transcript, at 1608:59, the captain addressed the first officer before responding to the mechanic, stating, "I'm gonna click it off you got it." One second later, the first officer replied, "ok." At 1609:01, the captain reiterated to the LAX mechanic that the spike occurred "when we do the primary trim but there's no appreciable uh change in the uh electrical uh when we do the alternate." The LAX mechanic replied that he would see them when they arrived at the LAX maintenance facility.

At 1609:13, the captain stated, "lets do that." At 1609:14.8, the CVR recorded the sound of a click and, at the same time, the captain stating, "this'll click it off." According to FDR data, the autopilot was disengaged at 1609:16. At the same time, the CVR recorded the sound of a clunk, followed by two faint thumps in short succession at 1609:16.9. The CVR recorded a sound similar to the horizontal stabilizer-in-motion tone at 1609:17. At 1609:19.6, the CVR again recorded a sound similar to the horizontal stabilizer-in-motion tone, followed by the captain's comment, "you got it?" (FDR data indicated that during the 3 to 4 seconds after the autopilot was disengaged, the horizontal stabilizer moved from 0.4 to a recorded position of 2.5 airplane nose down, and the airplane began to pitch nose down, starting a dive that lasted about 80 seconds as the airplane went from about 31,050 to between 23,000 and 24,000 feet.)

At 1609:26, the captain stated, "it got worse," and, 5 seconds later, he stated "you're stalled." One second later, the CVR recorded a sound similar to airframe vibration getting louder. At 1609:33, the captain stated, "no no you gotta release it ya gotta release it." This statement was followed by the sound of a click 1 second later. At 1609:52, the captain stated, "help me back help me back." Two seconds later, the first officer responded, "ok."

One second later, at 1609:55, the captain contacted the Los Angeles Air Route Traffic Control Center (ARTCC) and stated, "center Alaska two sixty one we are uh in a dive here." At 1610:01.6, the captain added, "and I've lost control, vertical pitch." At 1610:01.9, the CVR recorded the sound of the overspeed warning (which continued for the next 33 seconds). At 1610:05, the controller asked flight 261 to repeat the transmission, and, at 1610:06, the captain responded, "yea we're out of twenty six thousand feet, we are in a vertical divenot a dive yetbut uh we've lost vertical control of our airplane." At 1610:20, the captain stated, "just help me."

At 1610:28.2, the captain informed the Los Angeles ARTCC controller, "we're at twenty three seven request uh." At 1610:33, the captain added, "yea we got it back under control here." One second later, the first officer transmitted, "no we don't." At 1610:45, the first officer stated, "let's take the speedbrakes off." One second later, the captain responded, "no no leave them there. it seems to be helping." At 1610:55, the captain stated, "ok it really wants to pitch down." At 1611:06.6, the captain stated that they were at "twenty four thousand feet, kinda stabilized." Three seconds later he added, "we're slowin' here, and uh, we're gonna uh do a little troubleshooting, can you gimme a block [altitude] between uh, twenty and twenty five?" FDR data indicated that, by 1611:13, the airplane's airspeed had decreased to 262 KIAS, and the airplane was maintaining an altitude of approximately 24,400 feet with a pitch angle of 4.4. At 1611:21, the controller assigned flight 261 a block altitude of between FL 200 and 250. Airplane performance calculations indicated that between about 130 and 140 pounds of pulling force was required to recover from the dive.

At 1611:43, the first officer stated, "whatever we did is no good, don't do that again." One second later, the captain responded, "yea, no it went down it went to full nose down." Four seconds later, the first officer asked, "uh it's a lot worse than it was?" At 1611:50, the captain replied, "yea yea we're in much worse shape now," adding, at 1611:59, "I think it's at the stop, full stopand I'm thinkingcan it go any worsebut it probably canbut when we slowed down, lets slow it lets get down to two hundred knots and see what happens."

At 1612:33, the captain told LAX maintenance, "we did both the pickle switch and the suitcase handles and it ran away full nose trim down." At 1612:42, the captain added, "and now we're in a pinch so we're holding uh we're worse than we were." At 1613:04, the captain indicated to LAX maintenance that he was reluctant to try troubleshooting the trim system again because the trim might "go in the other direction." At 1613:10, the LAX mechanic responded, "ok well your discretion uh if you want to try it, that's ok with me if not that's fine. um we'll see you at the gate." At 1613:22, the captain stated, "I went tab downright, and it should have come back instead it went

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the other way." At 1613:32, the captain asked the first officer, "you wanna try it or not?" The first officer replied, "uhh no. boy I don't know." Airplane performance calculations indicated that about 120 pounds of pulling force was being applied to the pilots' control columns at this point. At 1614:54, the Los Angeles ARTCC controller instructed the flight crew to contact another ARTCC controller on frequency 126.52, which the flight crew acknowledged. At 1615:19, the first officer contacted another ARTCC controller on 126.52 and stated, "we're with you we're at twenty two five, we have a jammed stabilizer and we're maintaining altitude with difficulty. uh but uh we can maintain altitude we thinkour intention is to land at Los Angeles." The controller cleared the airplane direct to LAX and then asked, "you want lower [altitude] now or what do you want to do sir?" At 1615:56, the captain replied, "I need to get down about ten, change my configuration, make sure I can control the jet and I'd like to do that out here over the bay if I may."

At 1616:32, the Los Angeles ARTCC controller issued flight 261 a heading of 280 and cleared the flight to descend to 17,000 feet. At 1616:39, the captain acknowledged, "two eight zero and one seven seventeen thousand Alaska two sixty one. and we generally need a block altitude." At 1616:45, the controller responded, "ok and just um I tell you what do that for now sir, and contact LA center on one three five point five they'll have further uh instructions for you sir." At 1616:56.9, the first officer acknowledged, "ok thirty five five say the altimeter setting." The controller responded, "the LA altimeter is three zero one eight." At 1617:02, the first officer responded, "thank you." According to the CVR and ATC recordings, this was the last radio transmission made from flight 261.

After the radio transmission, the captain told a flight attendant that he needed "everything picked up" and "everybody strapped down." At 1617:04, the captain added, "I'm gonna unload the airplane and see if we canwe can regain control of it that way." At 1617:09, the flight attendant stated, "ok we had like a big bang back there," and, the captain replied, "yea I heard it." At 1617:15, the captain stated, "I think the stab trim thing is broke." At 1617:21, the captain again told the flight attendant to make sure the passengers were "strapped in now," adding 3 seconds later, "cause I'm gonna I'm going to release the back pressure and see if I can get itback."

At 1617:54, the captain stated, "gimme slats extend," and, at 1617:56.6, a sound similar to slat/flap handle movement was recorded by the CVR. At 1617:58, the captain added, "I'm test flyin now." At 1618:05, the captain commanded an 11 flap deployment, and, at 1618:07, a sound similar to slat/flap handle movement was recorded. At 1618:17, the captain stated, "its pretty stable right heresee but we got to get down to a hundred an[d] eighty [knots]." At 1618:26, the captain stated, "OKbring bring the flaps and slats back up for me," and, at 1618:36.8, sounds similar to slat/flap handle movement were recorded. At 1618:47, the captain stated, "what I wanna dois get the nose upand then let the nose fall through and see if we can stab it when it's unloaded."

At 1618:56, the first officer responded, "you mean use this again? I don't think we shouldif it can fly." At 1619:01, the captain replied, "it's on the stop now, it's on the stop." At 1619:04, the first officer replied, "well not according to that it's not." At this time, FDR data indicated a horizontal stabilizer angle of 2.5 airplane nose down. Three seconds later, the first officer added, "the trim might be, and then it might be uh, if something's popped back thereit might be mechanical damage too." At 1619:14, the first officer stated, "I think if it's controllable, we ought just try to land it." Two seconds later, the captain replied, "you think so? ok lets head for LA."

About 5 seconds later, the CVR recorded the sound of a series of at least four distinct "thumps." At 1619:24, the first officer asked, "you feel that?" and the captain replied, "yea." At 1619:29, the captain stated, "ok gimme sl---." At 1619:32.8, the CVR recorded the sound of two clicks similar to the sound of slat/flap movement. At 1619:36.6, the CVR recorded the sound of an "extremely loud noise" and the sound of background noise increasing, which continued until the end of the recording. At the same time, the CVR also recorded sounds similar to loose articles moving around the cockpit. FDR data indicated that at 1619:36.6, the flaps were extending and the slats were moving to the mid position. The next few seconds of FDR data indicated a maximum airplane?nose-down pitch rate of nearly 25 per second. The FDR recorded a significant decrease in vertical acceleration values (negative Gs), a nose-down pitch angle, and a significant decrease in lateral acceleration values. By 1619:40, the airplane was rolling left wing down, and the rudder

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was deflected 3 to the right.

FDR data indicated that, by 1619:42, the airplane had reached its maximum valid recorded airplane-nose?down pitch angle of -70. At this time, the roll angle was passing through -76 left wing down. At 1619:43, the first officer stated, "mayday," but did not make a radio transmission. Six seconds later, the captain stated, "push and roll, push and roll." FDR data indicated that, by 1619:45, the pitch angle had increased to ?28, and the airplane had rolled to -180 (inverted). Further, the airplane had descended to 16,420 feet, and the indicated airspeed had decreased to 208 knots.

At 1619:54, the captain stated, "ok, we are invertedand now we gotta get it." FDR data indicated that at this time, the left aileron moved to more than 16 (to command right wing down), then, during the next 6 seconds, it moved in the opposite direction to ?13 (to command left wing down). At 1619:57, the rudder returned to the near 0 position, the flaps were retracted, and the airplane was rolling through -150 with an airplane-nose?down pitch angle of -9. After 1619:57, the airplane remained near inverted and its pitch oscillated in the nose-down position.

At 1620:04, the captain stated, "push push pushpush the blue side up." At 1620:16, the captain stated, "ok now lets kick rudderleft rudder left rudder." Two seconds later, the first officer replied, "I can't reach it." At 1620:20, the captain replied, "ok right rudderright rudder." At 1620:38, the captain stated, "gotta get it over against least upside down we're flyin." At 1620:49, the CVR recorded sounds similar to engine compressor stalls and engine spooldown. At 1620:54, the captain commanded deployment of the speedbrakes, and, about 1 second later, the first officer replied, "got it." At 1620:56.2, the captain stated, "ah here we go." The FDR recording ended at 1620:56.3, and the CVR recording ended at 1620:57.1.

The airplane impacted the Pacific Ocean near Port Hueneme, California. Pieces of the airplane wreckage were found floating on and beneath the surface of the ocean. The main wreckage was found at 34 03.5' north latitude and 119 20.8' west longitude.

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AVIATION Occurrence Type: Accident												
Landing Facility/Approach Inform	ation											
Airport Name Airp			Airport ID:	Airport Eleva	tion	Run	nway Used Runway Lengt			th	Runv	vay Width
Los Angeles Int'n'l Airport LA				126 Ft	. MSL	0	0					
Runway Surface Type:												
Runway Surface Condition:												
Type Instrument Approach:												
VFR Approach/Landing:												
Aircraft Information												
Aircraft Manufacturer Douglas			Mode MD-	el/Series 83					Serial 5307	Number 7		
Airworthiness Certificate(s): Normal; Transport												
Landing Gear Type: Retractable - Trie	cycle											
Homebuilt Aircraft? No Nun						Max Gross Wt. 160000 LBS Nur					mber of Engines: 2	
• • • • • • • • • • • • • • • • • • • •				Engine Manufacturer: Model/Series: Pratt & Whitney JT8D-217C						Rated Power:		
- Aircraft Inspection Information												
Type of Last Inspection	Date of Last Inspection Time Since Last Inspection					ection		Airfran	ne To	tal Time		
Continuous Airworthiness 01				01/1999 4177 Hours							26	5584 Hours
- Emergency Locator Transmitter (ELT)	Information											
ELT Installed? No ELT Operated?					ELT	Aided ii	n Locating Ad	cident S	Site?			
Owner/Operator Information												
Registered Aircraft Owner			Street	Street Address								
				City								Zip Code
Operator of Aircraft			Street	Address		e a a l	Nd					
Operator of Aircraft	City	19300 International Blvd City							е	Zip Code		
ALASKA AIRLINES INC	Seattle							WA		98188		
Operator Does Business As:	Operator Designator Code: ASAA											
- Type of U.S. Certificate(s) Held:												
Air Carrier Operating Certificate(s): Flag	g Carrier/Dom	nestic										
Operating Certificate:				Operator (Certific	ate:						
Regulation Flight Conducted Under: Pa	ırt 121: Air Ca	arrier										
Type of Flight Operation Conducted: So	heduled; Inte	rnation	al; Passe	nger Only								
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ANTATION									1					
	AVIATI	Occurrence Type: Accident												
First Pilot Information														
Name City										Sta	ite [Date of Birth	Age	
On File									53					
Sex: M Seat Occupied: Left Principal Profession: Civilian Pilot Certificate Number:											er:			
Certificate(s): Airline Transport														
Airplane Rating(s):														
Rotorcraft/Glider/LTA:														
Instrument F	Rating(s): Airpl	ane												
Instructor Rating(s):														
Type Rating	/Endorsement fo	or Accident/In	cident Aircra	ft? Yes			Cu	rrent Bie	nnial Flight	Reviev	w? 11/1	999		
Medical Cer	t.: Class 1	Medica	l Cert. Statu	s: Valid Me	dicalw/ wa	aivers/lin	n.		Date of L	ast M	edical Ex	am: 11/1999		
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- Flight Time	- Flight Time Matrix All A/C This Make and Model		Airplane Single Engine	Airplane Mult-Engine	Night		Instrument Actual Simu			Rotorcraft	Glider	Lighter Than Air		
Total Time	Total Time 17750 14149													
Pilot In Com	mand(PIC)	14149	14149											
Instructor							_			_				
Last 90 Day		133					_			_				
Last 30 Day		52					-							
Last 24 Hou		3	3			 								
Seatbelt Us	ed? Yes	Shou	lder Harness	Used? Yes		Т	Toxicology Performed? Second Pilot? Yes							
Flight Plar	n/Itinerary													
Type of Flig	ht Plan Filed: IF	R												
Departure P	oint				-	;	State Airp		Airport Identifier		Departure Time		Time Zone	
PUERTO '	VALLARTA						PV		PVR		1337		PST	
Destination						;	State	Ai	rport Identif	ier				
SAN FRANCISCO								CA SFO						
Type of Clearance: IFR														
Type of Airspace:														
Weather Information														
Source of Briefing: Company														
Method of Briefing: Unknown														
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AVIATION			0	Occurrence Type: Accident								
Weather Information												
WOF ID	Observation Time	Time Zone	WOF	F Elevation WOF Distance From Acc					dent Site Direction From Accide			: Site
	0000			0 Ft.	MSL	0 NM					0 [Deg. Mag.
Sky/Lowest Cloud Condition: Unknown							Ft. AC	3L	Condition o	of Ligh	nt: Day	
Lowest Ce	west Ceiling: Unknown				AGL	Visib	ility:	0	SM	Alti	meter: 30.17	"Hg
Temperatu	ıre: -9 °C	Dew Point:	Point: -11 °C Wind Direction: 230 Density Altitude: Ft.							Ft.		
Wind Spee	Wind Speed: 8 Gusts: Weather Condtions at Accident Site: Visual Conditions											
Visibility (F	sibility (RVR): 0 Ft. Visibility (RVV) 0 SM Intensity of Precipitation:											
Restriction	s to Visibility: None	•										
Type of Pro	Type of Precipitation: None											
Accident Information												
Aircraft Damage: Destroyed Aircraft Fire: None Aircraft Explosion None												
Classificati	on: U.S. Registered/U	.S. Soil										
- Injury Su	mmary Matrix	Fatal	Serious	Mino	r	None	TOTAL					
First Pi	lot	1					1]				
Second	d Pilot	1					1					
Studen	t Pilot]				
Flight I	nstructor]				
Check	Pilot]				
Flight E	Engineer]				
Cabin A	Attendants	3					3					
Other C	Crew							1				
Passer	ngers	83					83					
- TOTAL A	ABOARD -	88					88]				
Other 0	Ground	0	(0		0	7				
- GRANE	TOTAL -	88	(+	0							

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AVIATION	Occurrence Type: Accident								
Administrative Information									
Investigator-In-Charge (IIC)									
RICHARD RODRIGUEZ									
Additional Persons Participating in This Accident/Incid	ent Investigation:								
VICTORIA ANDERSON									